

### **REMARKS**

Please reconsider the present application in view of the following remarks.  
Applicant thanks the Examiner for carefully considering the present application and indicating that claims 2, 6, and 10 contain allowable subject matter.

#### **I. Disposition of Claims**

Claims 1-10 and 13-15 of the present application are pending.

#### **II. Objection(s)**

The Specification was objected to as failing to provide antecedent basis for the claimed subject matter. Particularly, the recitation of "direct" propagation in the claims was cited as lacking antecedent basis in the Specification. However, Figure 4b, which forms part of the Specification, clearly supports the recitation of "direct" propagation as a signal is clearly directly propagated from an output of a clock driver **40** to a connection point residing at a non-exterior region of the clock grid **42**. *See also* Figure 4a. Thus, there is clear antecedent basis in the Specification for the claimed recitation of "direct" propagation. Accordingly, withdrawal of this objection is respectfully requested.

#### **III. Rejection(s) Under 35 U.S.C § 103**

Claims 1, 3-5, 7-9, and 13-15 of the present application were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2003/0074642 in the name of Haritsa et al. (hereinafter "Haritsa"). However, for the reasons set forth below, this rejection is respectfully traversed.

As evidenced by the enclosed 37 CFR § 1.131 affidavit, the claimed invention (i) was conceived prior to at least July 23, 2001, which is prior to the earliest effective 35 U.S.C. § 102(e) date of Haritsa, i.e., prior to October 17, 2001, and (ii) was subsequently constructively reduced to practice with due diligence exercised by the inventors. Accordingly, Haritsa is not prior art to the present application and withdrawal of the 35 U.S.C. § 102(e) rejection is respectfully requested.

#### IV. Conclusion

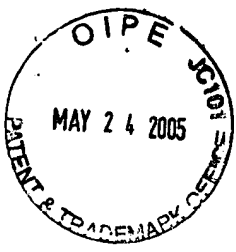
Applicant believes this reply is fully responsive to all outstanding issues and places the present application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 03226.136001; P6821).

Respectfully submitted,

Date: 5/24/05

  
Wasif H. Qureshi, Reg. No. 51,048  
OSHA · LIANG LLP

One Houston Center, Suite 2800  
1221 McKinney Street  
Houston, TX 77010  
Telephone: (713) 228-8600  
Facsimile: (713) 228-8778



U.S. Patent Application Serial No. 09/997,426  
Attorney Docket No. 03226.136001; P6821

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Tyler THORP et al. Art Unit : 2825  
Serial No.: 09/997,426 Examiner : A. THOMPSON  
Filed : November 29, 2001 Confirmation No.: 6431  
Title : CLOCK GRID SKEW REDUCTION USING A WIRE TREE ARCHITECTURE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

32615  
PATENT TRADEMARK OFFICE

**DECLARATION PURSUANT TO 37 CFR § 1.131**


In connection with the Applicant's Response to the final Office Action of March 29, 2004, this Declaration sets forth the pertinent facts proving conception of the claimed invention prior to at least **July 23, 2001**.

1. We, Tyler Thorp, Pradeep Trivedi, Gin Yee, and Lynn Ooi, are the listed inventors for U.S. Patent Application No. 09/997,426 entitled "Clock Grid Skew Reduction Using a Wire Tree Architecture."
2. We, Tyler Thorp, Pradeep Trivedi, Gin Yee, and Lynn Ooi, conceived the claimed invention prior to at least July 23, 2001, as evidenced by the enclosed invention disclosure submitted to the present Assignee and (i) dated July 23, 2001, (ii) authored by Tyler Thorp, and (iii) setting forth a description of the claimed invention.
3. We, Tyler Thorp, Pradeep Trivedi, Gin Yee, and Lynn Ooi, conceived the claimed invention prior to at least July 23, 2001, as discussed above, in the United States.

4. We, Tyler Thorp, Pradeep Trivedi, Gin Yee, and Lynn Ooi, diligently worked on the reduction to practice of the invention from at least the date established by the enclosed document (referenced above) until at least the date of constructive reduction to practice established by the filing of U.S. Patent Application No. 09/997,426 on November 29, 2001.

We, Tyler Thorp, Pradeep Trivedi, Gin Yee, and Lynn Ooi, hereby declare that all statements made herein of our own knowledge are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed this day, 12 of April 2005.

  
Tyler Thorp

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Pradeep Trivedi

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Gin Yee

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Lynn Ooi

Respectfully submitted,

Date: \_\_\_\_\_

\_\_\_\_\_  
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OSHA & MAY L.L.P.  
1221 McKinney Street, Suite 2800  
Houston, Texas 77010  
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Facsimile: (713) 228-8778

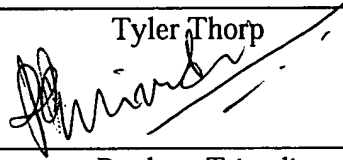
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Signed this day, \_\_\_\_\_ of April 2005.

Signed this day, 26<sup>th</sup> of April 2005.

Signed this day, \_\_\_\_\_ of April 2005.

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Tyler Thorp  
  
\_\_\_\_\_  
Pradeep Trivedi

\_\_\_\_\_  
Gin Yee

\_\_\_\_\_  
Lynn Ooi

Respectfully submitted,

Date: \_\_\_\_\_

\_\_\_\_\_  
Wasif H. Qureshi, Reg. No. 51,048  
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Houston, Texas 77010  
Telephone: (713) 228-8600  
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Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Tyler Thorp

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Pradeep Trivedi

Signed this day, 29 of April 2005.

  
\_\_\_\_\_  
Gin Yee

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Lynn Ooi

Respectfully submitted,

Date: \_\_\_\_\_

\_\_\_\_\_  
Wasif H. Qurcshi, Reg. No. 51,048  
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Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Tyler Thorp

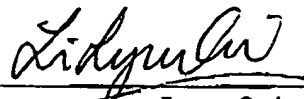
Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Pradeep Trivedi

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Gin Yee

Signed this day, 21 of April 2005.

  
\_\_\_\_\_  
Lynn Ooi

Respectfully submitted,

Date: \_\_\_\_\_

\_\_\_\_\_  
Wasif H. Qureshi, Reg. No. 51,048  
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1221 McKinney Street, Suite 2800  
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Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Tyler Thorp

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Pradeep Trivedi

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Gin Yee

Signed this day, \_\_\_\_\_ of April 2005.

\_\_\_\_\_  
Lynn Ooi

Date: \_\_\_\_\_

5/24/05

Respectfully submitted,



\_\_\_\_\_  
Wasif H. Qureshi, Reg. No. 51,048  
OSHA · LIANG LLP  
1221 McKinney Street, Suite 2800  
Houston, Texas 77010  
Telephone: (713) 228-8600  
Facsimile: (713) 228-8778

Date: Thu, 26 Jul 2001 17:02:18 -0700 (PDT)  
From: Celeste Filoia <Celeste.Filoia@sun.com>  
Subject: P6821 - Invention Disclosure - Thorp  
To: tyler.thorp@eng.sun.com  
Cc: pradeep.trivedi@eng.sun.com, ramin.aghevli@eng.sun.com, marc.foodman@east.sun.com,  
denise.shannon@eng.sun.com, maria.moore@corp.sun.com, kristine.bombaci@corp.sun.com,  
celeste.filoia@sun.com



Tyler,

Here's a copy of your disclosure with the Sun reference number assigned to it (P6821). Please use this reference number when referring to this matter in the future. Should you have questions regarding the status of this disclosure, please contact your Managing Sun Attorney (listed below). Questions regarding any patent incentive payments should be directed to Kristine Bombaci, Incentive Program Specialist, x60821. Thank you again for submitting this disclosure!

Kristine:

Approved for bonus?

\$250 each.

1) THORP, TYLER (EIN: 72378)

3) TRIVEDI, PRADEEP (EIN: 96790)

Note to the inventor(s): If approved, the incentive transaction will be processed two weeks from today. This means that your incentive payment may not show up until the pay period after the processing date.

THORP, TYLER	tyler.thorp@Eng	USUN02-106 x48038/+1 408 774 8038
TRIVEDI, PRADEEP	pradeep.trivedi@Eng	USUN02-106 x45626/+1 408 616 5626

Attorney Responsibility:

Sun Primary Attorney: Marc Foodman

Managing Sun Attorney: Ramin Aghevli

----- Begin Forwarded Message -----

X-Unix-From: Tyler.Thorp@Sun.COM Mon Jul 23 18:17:22 2001  
Date: Mon, 23 Jul 2001 18:17:19 -0700 (PDT)  
From: Tyler Thorp <Tyler.Thorp@Sun.COM>  
Subject: Skew Reduction Technique for the Clock-grid Structure  
To: inventions@corp.sun.com  
Cc: Tyler.Thorp@Sun.COM  
MIME-Version: 1.0

\*\*\*NEW INVENTION DISCLOSURE BY Tyler Thorp \*\*\*  
(email address: tyler.thorp@eng.sun.com)

=====

8. BUSINESS UNIT

Business Organization is: Processor Products Group

Microelectronics: SPARC  
(SP: Processor Products Group)

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1. TITLE: Skew Reduction Technique for the Clock-grid Structure

This invention relates primarily to (hardware or software): Hardware

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2. BACKGROUND AND RELATED ART

A. What is the technical problem which your invention addresses as specifically as you can. (If the technical problem is described in a document, article, book, etc., please give details in the next question.)

The problem we are addressing is to reduce the uncertainty in clock arrival time across a large microprocessor by reducing the systematic components of skew. Our method for solving this problem is to balance the arrival times of global clock signals by using a balanced wire tree structure. Our main contribution is applying this wire tree structure to a global clock grid.

B. What is the Closest Related Art?

Please list the closest related art of which you're aware, including (1) published articles, books, etc.; (2) patents; (3) products (developed by Sun or another company); or (4) any other information you or your colleagues may be aware of at this time. Please give date(s) of all references, if known. <B>Note that you do not have to do a prior art search! If you're unaware of any relevant prior art, please say so.

Haven't seen anything like this before.

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### 3. DRAWING(S)

Drawings for this invention are available.

Drawings will be provided upon request: TRUE

If you have drawings or diagrams that illustrate the invention, please send them to us (e.g. Postscript documents by email). These can include circuit schematics, structures, process steps, a program flowchart, block diagrams, high-level pseudocode, etc., as applicable. If you have original drawings in your lab notebook, please send photocopies of the pertinent pages to Celeste Filoia at MS PAL01-521. If no drawings exist, that's OK! Just say so. The patent attorney who writes up the application will generate drawings as needed after meeting with you about the disclosure.

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### 4. WRITTEN DESCRIPTION

Please provide a written description of the invention (with reference to the drawings) or send a hard copy to Celeste Filoia at Mail Stop PAL01-521.

In your description, please indicate: (1) the problem(s) that the related art has been unable to solve; and (2) how your invention solves them. Stress the fundamental principle(s) of the invention from an engineering viewpoint.

If you already have a written description (such as a white paper) please note that here and send it by email or interoffice shuttle. (Email is preferable to celeste.filoia@Corp). However, please also provide a short (1-2 paragraph) description of the invention here, so we know what the focus is, since a white paper may cover many areas that are not this specific invention.

The invention is described as follows:

The problem we are addressing is to reduce the uncertainty in clock arrival time across a large microprocessor by reducing the systematic components of skew. Our method for solving this problem is to balance the arrival times of global clock signals by using a balanced wire tree structure. Our main contribution is applying this wire tree

structure to a global clock grid.

Please see the attached frame file for figures of our global clock tree network and global clock grid with/without a wire tree.

The wire tree reduces the worst-case arrival time difference between the destination and source clock drivers. Figure 2 explains this. The trade-off for reducing the worst-case arrival time difference is an increase in power.

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5. CONCEPTION OF INVENTION

Date of conception: 5/7/01  
Date of first written description: 6/15/01

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6. REDUCTION TO PRACTICE

Has the invention been reduced to practice? NO

Comments, if any, on conception of invention and/or first written description:

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7. INVENTOR(S)

INVENTOR 1:

EIN: 72378  
Name: Tyler Thorp  
Address: 473-H Costa Mesa Terrace, Sunnyvale, CA  
Citizenship: USA  
Payroll:

INVENTOR 2:

Employee Number: 96790  
First Name: Pradeep  
Middle Initial: -  
Last Name: Trivedi  
Home Address: -  
Citizenship: India  
E-mail Address: pradeep.trivedi@eng.sun.com  
Sun Phone: x45626  
Sun Mailstop: Sun02-301

COMMENTS on inventors or inventorship:

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9. DEPARTMENT, etc.

Department Name: PPG, SPARC Engineering  
Department Manager: Dan Hopta  
Project Name: Millenium  
Product Names(s): UltraSPARC 5

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10. DATES OF PRODUCT TESTING AND RELEASE

Alpha Testing: XXXXX  
Beta Testing: XXXXX  
General release or sale: XXXXX

COMMENTS on product testing and release:

XXXXXX

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11. DISCLOSURE OF INVENTION

Have there been any disclosures of the invention to date (whether internal or outside of Sun), or any contemplated articles, advertisements, outside disclosures or presentations at tradeshow or conferences?

Not aware of any

-----  
12. INTERNAL DISCLOSURE(S)

First disclosure date (internal at Sun): 6/5/01  
Name of first discloser at Sun: Pradeep Trivedi

Please state the circumstances of this disclosure:

MM clock group meeting on skew reduction

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13. ARTICLE(S)

Have any articles been published? NO

If "yes", please list: (1) the name(s) of the publication(s),  
(2) the date(s) of publication, and (3) the <B>date(s) of submission  
of the article(s) to those publications for review:

XXXXX

-----  
14. ADVERTISEMENTS, PRESS RELEASES AND PRODUCT ANNOUNCEMENTS

Do you know if any (a) advertisements, (b) <B>press releases, or (c)  
product announcements have been issued containing information about this  
product, or whether any other attempt has been made to market the product?

DETAILS about any ads, press releases and product announcements:

None

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15. OUTSIDE DISCLOSURE(S)

Have you or any others discussed the invention with any non-Sun  
employees or given any written or oral abstracts or other  
presentations of information relating to the invention, whether or not  
under nondisclosure agreement? (...for example, to current or  
potential co-developers, customers or vendors.)

NO

Were all outside disclosures under NDA? XXXXX (yes/no)

DETAILS about any disclosures outside Sun:

XXXXX

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16. TRADE SHOWS AND CONFERENCES

Are there any upcoming trade shows or conferences? XXXXX

DETAILS about upcoming trade shows and/or conferences:

XXXXX

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17. OUTSIDE COUNSEL

Do you have any preference to outside counsel? We do not guarantee that the

attorney noted will be  
assigned to this matter.

David Nixon

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18. RELATED CASES

Is this disclosure related to any patent applications in progress or disclosures previously submitted?

NO

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ADDITIONAL COMMENTS BY INVENTOR:

XXXXX

This invention disclosure was submitted by (Tyler Thorp), whose email address is: tyler.thorp@eng.sun.com

[ASCII IDT, html version 1.5.1, rev. 04/05/00]

--Tyler

----- End Forwarded Message -----

[1] "clkgrid\_wiretree.fm" MAKER, 96256 bytes